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WATER SUPPLY OUTLOOK FOR MONTANA

and FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE, and MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

MAY 15, JUNE 1, 1967 and SPECIAL MEASUREMENTS

11/13/7

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data or reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	P. O. Box 38, Boise, Idaho 83701
Montana	P. O. Box 855, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4001 Federal Building, Salt Lake City, Utah 84111
Washington	840 Bon Marche Bldg., Spokane, Washington 99206
Wyoming	P. O. Box 340, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia

WATER SUPPLY OUTLOOK

FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

For

MONTANA

Report Prepared

By

Phillip E. Farnes Snow Survey Supervisor

And

Stanley E. Cook
Assistant Snow Survey Supervisor

Snow Survey and Water Supply Forecasting Unit Soil Conservation Service Box 98 Bozeman, Montana

Issued By

A. B. Linford State Conservationist Soil Conservation Service Bozeman, Montana J. A. Asleson, Director Montana Agricultural Experiment Station Bozeman, Montana



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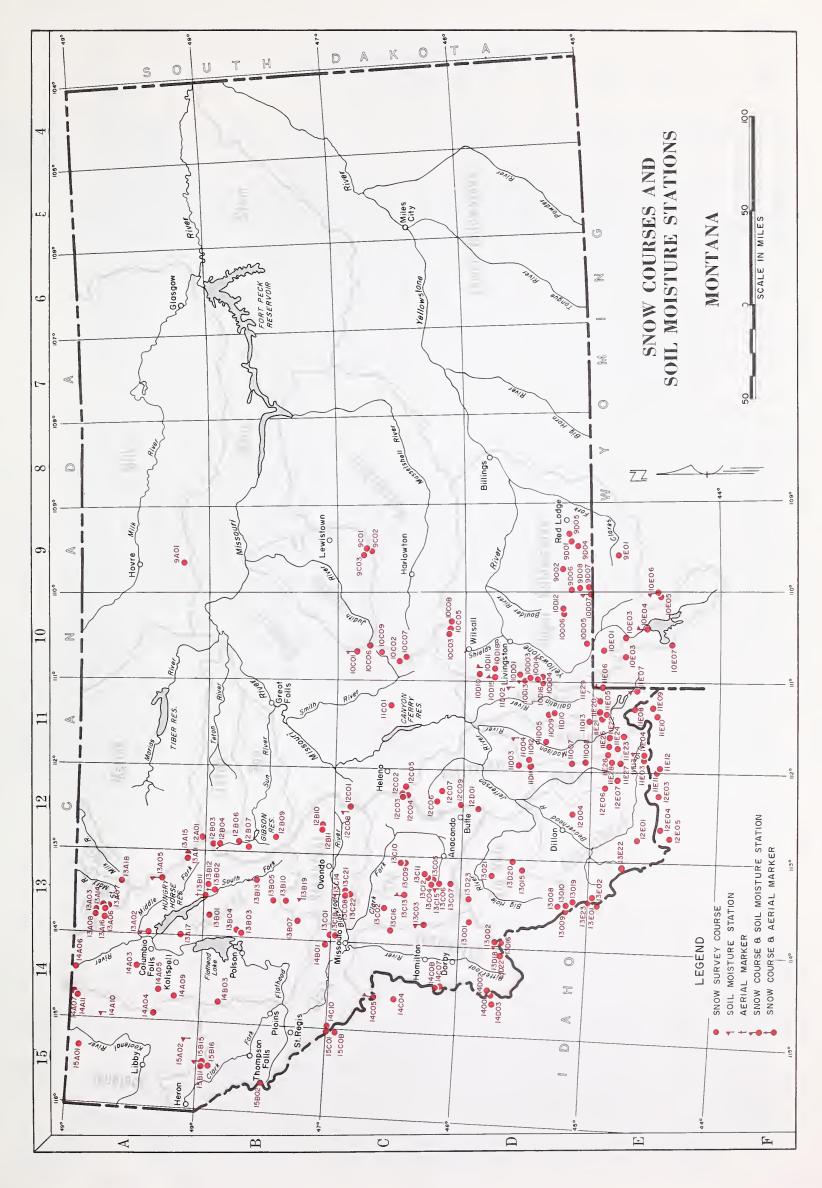
MONTANA WATER SUPPLY OUTLOOK June 1, 1967

The snow pack continued to increase through mid-May and resulted in additional May 15 snow surveys being made.

Snow melt conditions the last half of May have been almost ideal for dissipating the large snow pack, particularly the lingering low elevation snow. However, soils are quite wet and would be capable of producing a large runoff if heavy rainfall occurs. The high elevation snow pack is presently above average but should present no problem so far as high water, as it is confined to relatively small areas.

Upon completion of the melt season, curves for all Montana snow pillows in operation during this season will be printed and distributed to those on our regular State bulletin mailing list.





INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

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	Drainage Beam & Course Name	RUBY RIVER	Clovor Maadow Divida Noteh	81G HOLE RIVER Abundance Lake	Darkhorse Lako Foolhan Jahnke Greek Palisado Greek JEFFERSON RIVER	Berry Mondow Copper Mountain Pienio Grounds Pipeatone Pass MADISON RIVER	Call Rond Four Milo Frogsout Lake Frossout Mountain Hebgan Dam	Jack Creek Lake Creek Lion Mountain Lower Twin Maridian Creek	North Meadow Potomngoton Park Sentinel Greek Teepes Traek	Upper West Fork Weet Yellowetone GALLATIN RIVER	Arch Falls Bear Basin Bridgor Boul Carrot Basin Devil's Sida Hood Mondow Lick Creek	Little Park Maynord Creek New World Showor Falls Taylor Penks	MISSOURIRIVER MAI Doulder Mountain Chessman Reservoir	Decodano Creek Elk Pork Crasshopper Kinge Hill Rocky Boy Stomple Poses Ten Mile Lower Ten Mile Middle	SUN-TETON-MARIAS SUR-TETON-MARIAS Badger Pass Cabin Creek Five-Bull		JUDITH KIVER Avalancha Gryann Lako Rock Greek Spur Park	UPPER YELLOWSTONE Bald Ridge Camp Sonia	Cooks Station Cravice Mountain Fisher Greek Crizaly Penk Independence Mounant Penk Northoat Entrance Percupie R.S. Sacalawa Such Fork Shields Timberline Greek Wett Rosebud Wett Rosebud
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ES	Range	BASIN		308	25W 25W 25W	25W 11W 18W 19W 19W	25W 22W 13W 22W	12.V 17.V 17.V 15.V	15 W 22 L	15%	3288888	77777	23888	1984 1984 1984 1984	23W 23W 19W 23W	WZ1	2000	BASIN	152 154 155 155 155 155 155 155 155 155 155
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	Drainage Basin & Course Name		KOOJENAI RIVER	Bares Creek Bares Midway Bares Frail	Sraves Creek Sed Mountain Weasel Divide	France Peak France Peak France Peak France Pake Big Greek Camp Misery France Peake	Griffin Creek Divide Gundight Lake Hell Rearing Divide Helbrock	Logen Oreek Maries Pass Mineral Creek North Fork Jocko Spotted Reer Mounteln	Trinkus Lake Tvin Creeks Upper Holland Lake	CLARK FORK RIVER Block Pine Cupper Fook	Coyese Hill Coyese Hill Fig Dordo Mine Fig Dordo Mine Gold Greek Lake Heart Lake Trail Hoodo Basin	Intergrands Intergrands Lubrecht Forest No. 3 Lubrecht Forest No. 4 Lubrecht Forest No. 6 Red Lion	Skalkeho Summit Slide Rock Mountain Southern Cross Spring Gulch Storm Lake	Stunt Mill Stunt Mountain TV Memtain BITERROOT RIVER Abbrose East For R.S.	Lost Horse Noz Perce Chap Nez Perce Pass Sadale Mountain Tvin Lakes		Josephine Lower No. 7 Mount Allan No. 7 Plegan Pass No. 6 Ptermigan No. 8		BEAVERHEAD RIVER Droody Dick Cartor Croek Lake I've Cores Lake I's Bit Home Springs Gold Stone Caryon Likevitor Rigge Lemin Res

HOODOO BASIN & BLACK PINE SNOW PILLOW DATA

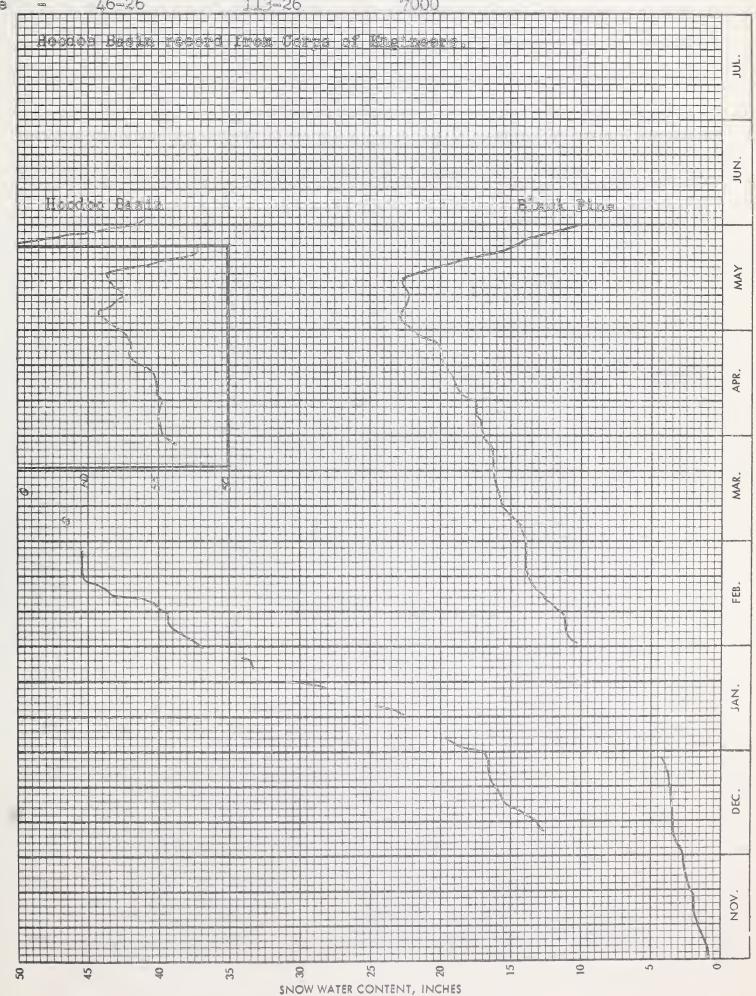
AS OF JUNE 1, 1967

 Hoodoo Basin - Sec.
 17 T.
 14N R.
 27W
 No.
 15C08
 Drainage:
 Clark Fork

 Black Pine - 26
 8N
 15W
 13C13

 Hoodoo Basin - Lat.
 46-59
 Long.
 115-02
 Elev.
 6000

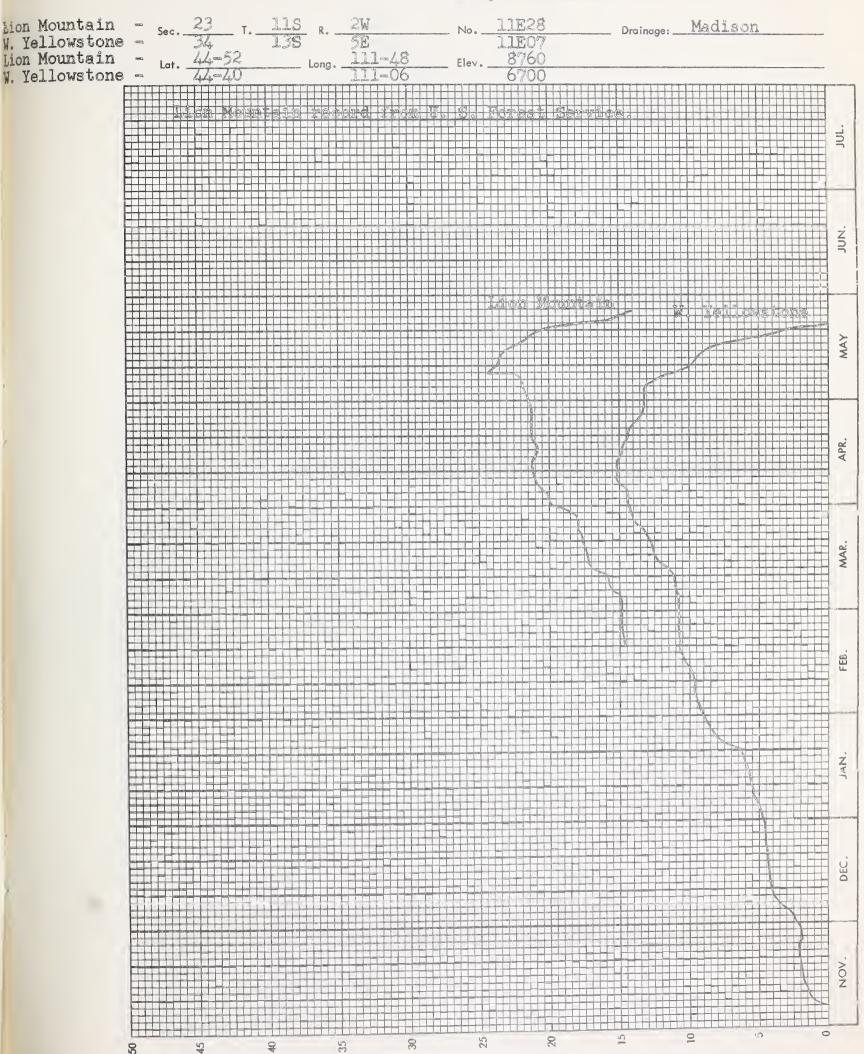
 Black Pine - 46-26
 113-26
 7000





LION MOUNTAIN & W. YELLOWSTONE SNOW PILLOW DATA

AS OF JUNE 1, 1967





BRIDGER BOWL & MAYNARD CREEK SNOW PILLOW DATA

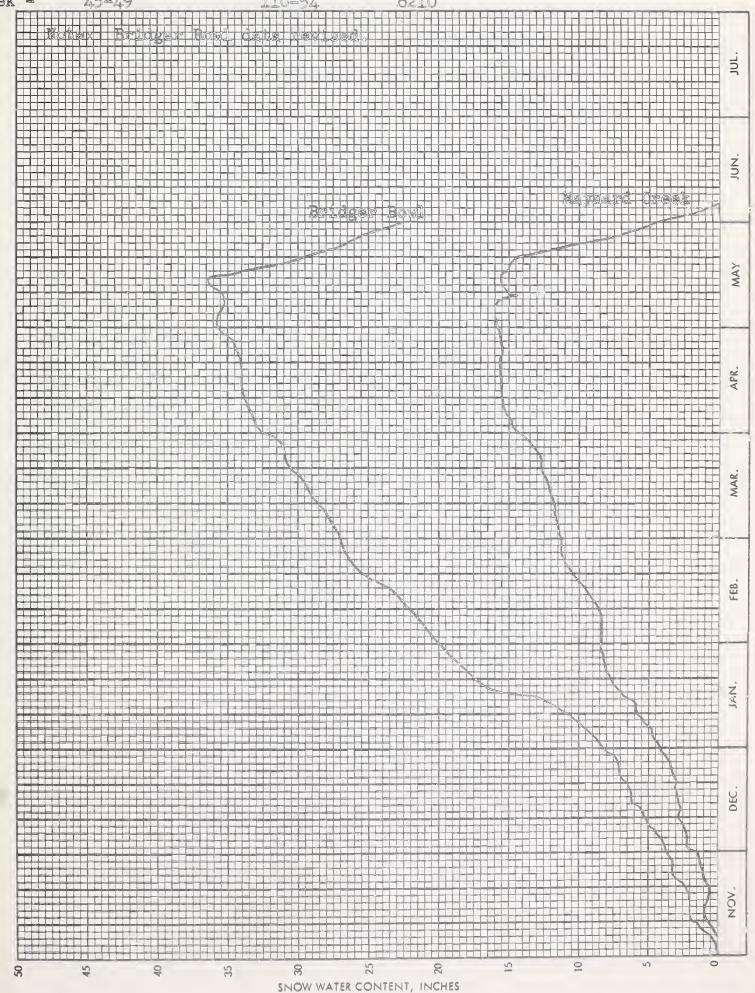
AS OF JUNE 1, 1967

 Bridger Bowl
 - Sec. 25
 T. 1N
 R. 6E
 No. 10D15
 Drainage: Gallatin

 Maynard Creek
 - 19
 1N
 7E
 10D18

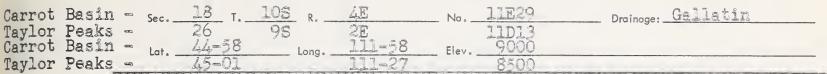
 Bridger Bowl
 - Lot. 45-48
 Long. 110-55
 Elev. 7250

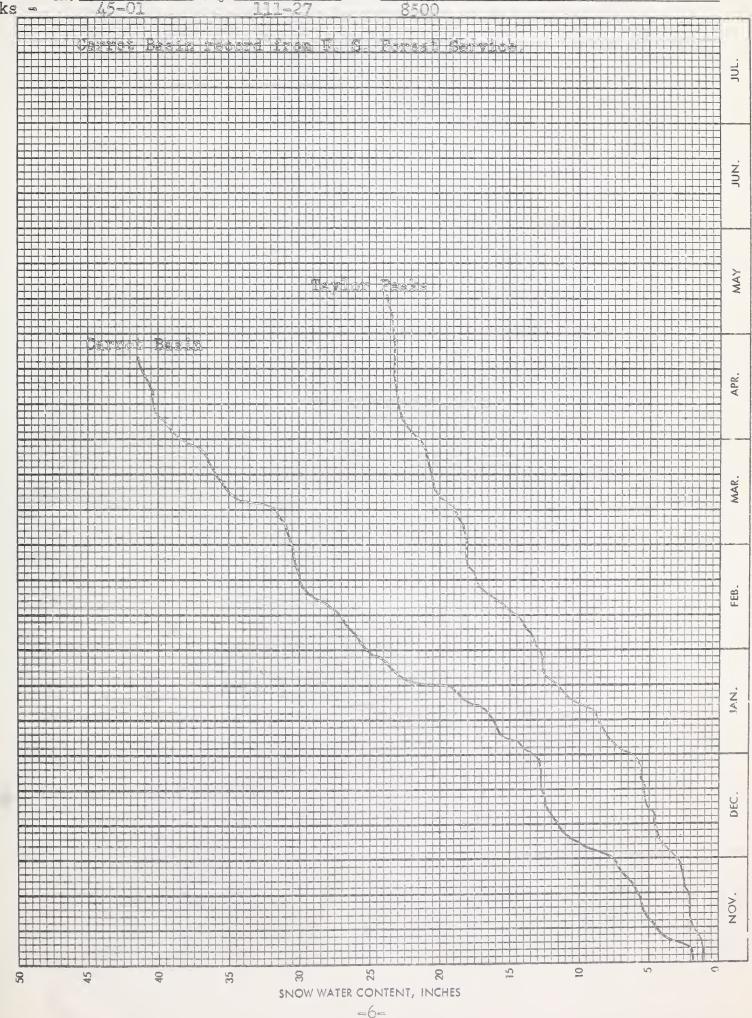
 Maynard Creek
 - 45-49
 110-54
 6210





CARROT BASIN & TAYLOR PEAKS SNOW PILLOW DATA

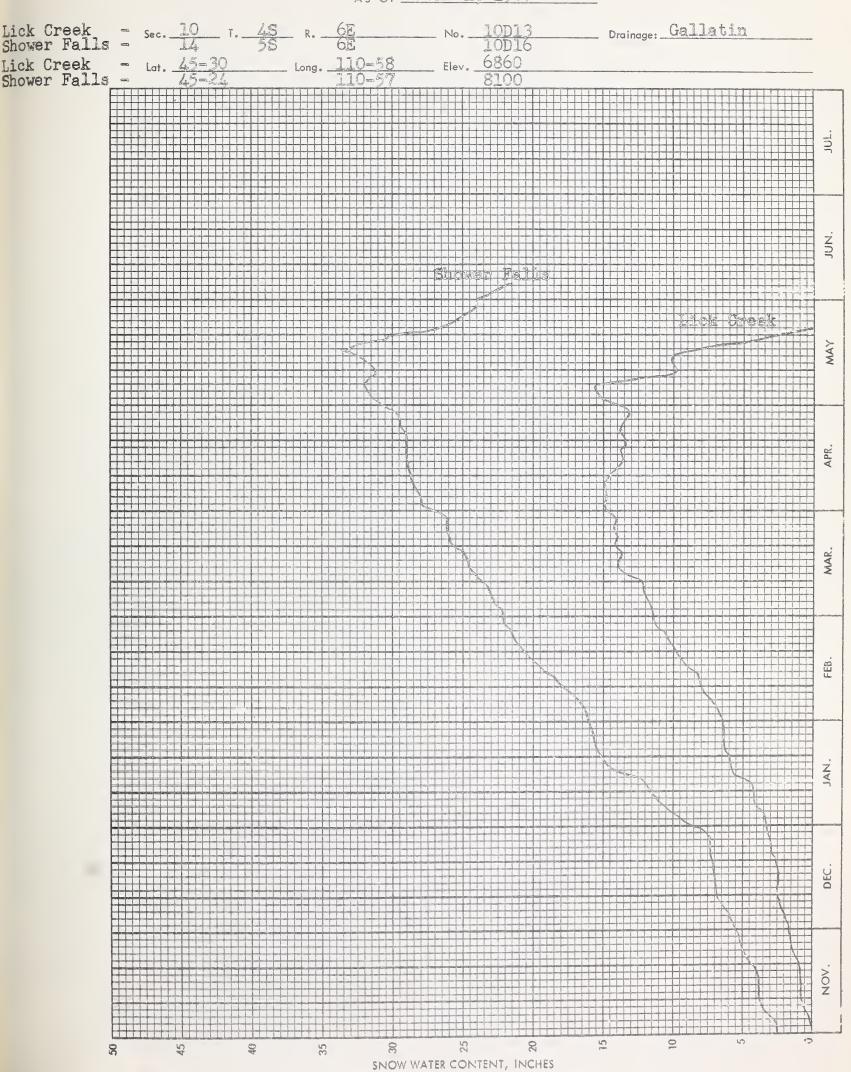






LICK CREEK & SHOWER FALLS SNOW PILLOW DATA

AS OF JUNE 1, 1967





SPUR PARK SNOW PILLOW DATA

AS OF JUNE 1, 1967

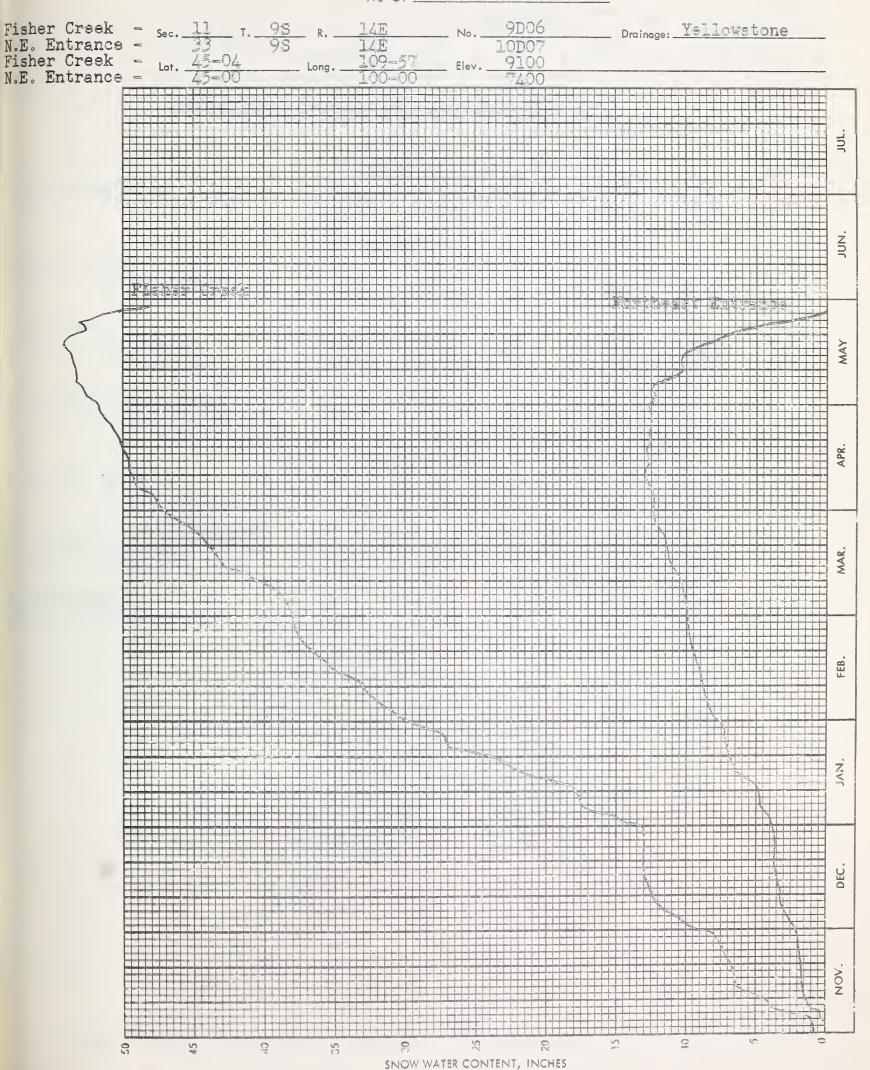
Sec. 20 T. 12N R. 9E No. 10006 Drainage: Judith Lat. 46-47 Long. 110-37 Elev. 8000 FëB. 20

SNOW WATER CONTENT, INCHES



FISHER CREEK & N.E. ENTRANCE SNOW PILLOW DATA

AS OF JUNE 1, 1967





AS OF

				CURRENT DATA		PAST	RECORD
And the second state of the second of the se	DATE	SHOW DEPTH	WATER CONTENT	WATER	CONTENT		
10.	RAME	ELEVATION	SURVEY		CORTENT	LAST YEAR	AVERAGE

CORRECTIONS TO PREVIOUSLY PUBLISHED 1967 DATA

Gallatin	Divon	<u>Januar</u>	<u>v l</u>				
11E06	Twenty-One Mile	7150	1/2	40	10.3	3.8	8.0
Flathead	River	March	1				
13A11	Beaver Lake	5900	3/5	71	25.4	17.5	600.
Clark For 13004 13005	Intergaard Southern Cross	6450 6500	3/1 3/1	<u>29</u> 27	8.6 <u>8.2</u>	5.7 5.4	7.2 5.6
Upper Yel 10D07	<u>lowstone River</u> Northeast Entrance	7400	3/6	39	11.1	5.0	7.5
Jefferson	Pivon	April	_1				
12006	Picnic Grounds	6500	3/31	23	6.0	2.4	4.8*
Missouri 9A01	River (Main Stem) Rocky Boy	5200	4/1	31	8.4	3.3	4.3
Kootenai 15B16	<u>River</u> Baree Midway	4600	3/31	120	46.8	35.0	<u></u>



AS OF

		(URRENT DATA	PAST RECORD								
	SNOW COURSE			SNOW	WATER	WATER						
NO.	NAME	ELEVATICE	OF SURVEY	DEPTH	CONTENT	LAST YEAR	AVERAGE					
Corrections to Previously Published 1967 Data - cont.												
ni . +h a . d	D % mag as	May	1									
Flathead 13A16	Mineral Creek	4000	5/1	53	22.2	9.4	6000					
Clark Fo			/ -									
13B10 13C18	Coyote Hill Spring Gulch	4200 6000	<u>5/3</u> 4/30 4/30 4/29	<u>19</u> 23	7.0 6.4 40.3	0.4 0.0	2.3 3.1*					
13001	Stuart Mountain	7400	4/30	97	40.3	28.6	30.4*					
14B01	TV Mountain	6800	4/29	97 62	22.5	17.6	20.3*					
The second secon	ad River											
13D09	Gold Stone	8100	5/2	68	22.0	9.9	=					
Jefferson			,									
12009	Copper Mountain	7700	5/1	62	18.6	5.9	=					
Madison 1		6850	1/20	2.4	77 ~	0 5	, ,					
TIEU)	Hebgen Dam	65 50	4,/29	34	11.5	0.5	4.8					
Missouri 11001	River (Main Stem) Boulder Mountain	7950	5 /1	ø,	an 2	7 ¢ ∩	76 78					
10007	Elk Peak	8000	5/1 5/2	84 <u>82</u>	29.3 28.7	18.0 17.2	16.1* 16.5*					
Sun-Maria	as-Teton Rivers											
12B07	Goat Mountain	7000	4/30	54	17.4	9.2	10.3*					
Judith R:	iver											
9002	Avalanche	7100	5/4	94	33.6	21.7	=1					
	llowstone											
9D07	Cooke Station	8150	5/2	72	28.6	15.5	acac					
<u>Kootenai</u>		ar 20 A .	as to		1-1							
15B11 15B16	Baree Creek Baree Midway	5500 4600	5/1 5/1	149 116	<u>65.6</u> 51.2	41.0 24.8	49.1					
	- was of state of a	4000	2/1	770	1206	£-\$40 €	_					



AS OF MAY 15, 1967

		AS OF MA	IX 15, 190	07			(Inches)
			-	URRENT DATA	1	PAST	RECORD
	SNOW COURSE	51.611.51	OATE OF	SNOW DEPTH	WATER CONTENT		CONTENT
10.	NAME	ELEVATION	SURVEY			LAST YEAR	AVERAGE
		COLUMBIA	RIVER BA	SIN			
KOOTENAI	RIVER						
15B11 15B16 15B15 BC 10 BC 11 14A11 BC 43 BC 33 BC 10B BC 10A 15A01 BC 20A 14A07	Baree Creek Baree Midway Baree Trail Fernie Glacier Graves Creek Gray Creek Kicking Horse Morrissey Ridge New Fernie Red Mountain Sullivan Mine Weasel Divide	5500 4600 3800 3500 4100 4300 5100 5400 6100 4100 6000 5100 5450	5/15 5/15 5/15 5/15 5/14 5/15 5/15 5/15	131 90 0 2 77 42 68 48 90 26 56 38 88	65.5 44.4 0.0 0.7 40.7 19.5 29.7 20.5 41.6 11.4 26.8 18.0 43.2	26.7 17.5 0.0 0.0 25.1 5.6 16.2 9.4 0.6 12.8 5.4 23.6	42.3* - - 19.3* - 17.6* 7.8* - - 18.4* 6.8* 32.6*
FLATHEAD 13A11 13A17 14A09 13B12 14A03 13B13 13A05 13A16 13B07 13B01 13B11 13B05	RIVER Beaver Lake Camp Misery Griffin Creek Divide Gunsight Lake Hell Roaring Divide Holbrook Marias Pass Mineral Creek North Fork Jocko Trinkus Lake Twin Creeks Upper Holland Lake	5900 6400 5150 6300 5770 4530 5250 4000 6330 6100 3580 7000	5/16 5/17 5/15 5/16 5/16 5/16 5/16 5/16 5/16 5/16	71 136 28 119 85 0 55 37 117 112 0 103	33.3 68.2 12.6 58.6 41.8 0.0 24.8 16.5 58.2 57.9 0.0 50.6	16.7	
13013 13013 13011 15010 13004 15802	Black Pine Black Pine Pillow Fred Burr Pass Hoodoo Basin Pillow Intergaard Lookout	7100 7100 8000 6000 6450 5250	5/15 5/15 5/17 5/15 5/16 5/15	52 SP 85 SP 36 93 13	21.1 22.8 37.1 58.6 12.7 41.1 4.5	2.8	
13012 13012 13003 13018 13001 14B01	Lubrecht Forest No. 2 Red Lion Skalkaho Summit Spring Gulch Stuart Mountain TV Mountain	3 5450 7100 7260 6000 7400 6800	5/13 5/17 5/17 5/14 5/14 5/13	54 74 16 91 54	21.6 33.1 5.8 40.5 20.6	12.4	23.0*

SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE



AS OF MAY 15, 1967

		((CURRENT DATA		PAST	RECORD
SHOW COURSE			DATE OF	SNOW DEPTH	WATER	WATER CONTENT	
NO.	NAME	ELEVATION	SURVEY	DEFIN	CONTENT	LAST YEAR	AVERAGE
BITTERRO	OOT RIVER						
13D02 14C07 13D22 14C08	Gibbons Pass Lost Horse Saddle Mountain Twin Lakes	7100 5940 7940 6510	5/15 5/16 5/15 5/16	67 78 82 108	28.8 36.3 36.6 49.3	2.6 11.8 12.4 21.4	20.1*



AS OF MAY 15, 1967

		/		CURRENT DATA		Y PAST R	tinches FCORD
	SNOW COURSE	DATE	SNOW	WATER	WATER C		
NO.	NAME	ELEVATION	OF Survey	DEPTH	CONTENT	LAST YEAR	AVERAGE
		MISSOURI	RIVER E	BASIN			
BEAVERI	HEAD RIVER						
11E04 11E03	Lakeview Canyon Lakeview Ridge	6930 7400	5/11 5/11	46 44	18.4 17.0	<u></u>	55. 65.
<u>JEFFERS</u>	SON RIVER						
12CO9 12C1O	Copper Mountain Nez Perce Creek	7700 6500	5/15 5/15	59 27	20. <i>5</i> 8.6	GEG.	#13 #13
MADISON	V RIVER						
11E05 10E02 11E07 11E07	Hebgen Dam Norris Basin West Yellowstone West Yellowstone Pillow	6550 7500 6700 6700	5/13 5/15 5/13 5/15	19 30 25 SP	7.7 12.2 11.1 9.4	960 960 950 950	600 600 600
GALLATI	N RIVER						
10D14 10D15 10D04 10D03 10D13 10D18 10D16 11E06	Arch Falls Bridger Bowl Pillow Devil's Slide Hood Meadow Lick Creek Pillow Maynard Creek Pillow Shower Falls Pillow Twenty-One Mile	7350 7250 8100 6600 6860 6210 8100 7150	5/15 5/16 5/15 5/15 5/16 5/15 5/13	48 SP 84 25 SP SP SP 59	19.0 36.1 32.4 10.5 9.8 15.4 33.1 25.5	7.2 15.7 19.5 0.0 0.0	
MISSOUR	I RIVER (Main Stem)						
10009 10001 12002 12003 12004	Deadman Creek Kings Hill Ten Mile Lower Ten Mile Middle Ten Mile Upper	6450 7500 6600 6800 8000	5/15 5/15 5/15 5/15 5/15	33 60 34 49 58	15.0 23.6 12.2 19.3 23.4	0.0	950 950 650 650
SUN-TET	ON-MARIAS RIVERS						
13A15 12A01 12B07 12B04 12B03	Badger Pass Freight Creek Goat Mountain Wrong Creek Wrong Ridge	6900 6000 7000 5700 6800	5/16 5/16 5/15 5/16 5/16	114 51 44 36 59	54.3 25.4 16.9 18.5 29.1	600 600 600 600	ence ence ence ence

SP - Snow pillow observation - water content only.

HOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE



AS OF MAY 15, 1967

	_	o or run		,0 %			tinches
				CURRENT DATA	A	PAST F	RECORD
SNOW COURSE			DATE	SNOW DEPTH	WATER	WATER CONTENT	
NO.	NAME	ELEVATION	SURVEY	DETTR	CONTENT	LAST YEAR	AVERAGE
TITLE TITLE	ת דיוויים						
UDLIH	RIVER						
9002	Avalanche	7100	5/15	84	36.3	====	=
9001	Crystal Lake	6100	5/15	41	18.8		==
9003	Rock Creek	5600	5/15	24	11.4	EE.	=
0006	Spur Park	8000	5/15	86	36.0	17.8	6 3
0006	Spur Park Pillow	8000	5/15	SP	35.3	- T	=
PPER Y	YELLOWSTONE RIVER						
4 1 241 6	Last File						
9D01	Camp Senia	7890	5/15	36	12.4	4.8	enq
DE03	Canyon	7750	5/14	54	21.8		=
9D07	Cooke Station	8150	5/16	65	28.8	ess	=
9D06	Fisher Creek	9100	5/16	126	54.3	ates,	===
9D06	Fisher Creek Pillow	9100	5/16	SP	54.4	can.	=
DE04	Lake Camp	7850	5/17	30	11.9	==	de la comp
DE01	Lupine Creek	7300	5/14	38	14.6		===
D07	Northeast Entrance	7400	5/16	26	10.6	one control	«C3)
DD07	Northeast Entrance Pillow		5/16	SP	10.6	cma,	6253
DD10	Sacajawea	6550	5/16	37	16.5	-	ober 1
3D04	Timberline Creek	8850	5/15	63	24.2	13.3	653
9D08	White Mill	8700	5/16	94	40.3	6 C3	===

P - Snow pillow observation - water content only.



AS OF JUNE 1, 1967

tinches

		((URRENT DATA		PAST R	ECORD	
	SNOW COURSE		DATE	SNOW DEPTH .	WATER CONTENT	WATER CONTENT		
NO.	NAME	ELEVATION	SURVEY	DEVIN .	CONTENT	LAST YEAR	AVERAGE	
		COLUMBIA	RIVER BA	SIN				
KOOTENAI	RIVER							
BC 11 14A11 BC 43 BC 32 15A01 14A07	Glacier Graves Creek Gray Creek Marble Canyon Red Mountain Weasel Divide	4100 4300 5100 5000 6000 5450	5/29 6/2 5/28 5/29 6/2 6/1	50 10 44 8 18 56	26.2 4.6 20.1 3.4 10.2 31.5	15.4 0.0 12.3 0.0 0.8 8.6	8.4* 9.5* 6.6*	
FLATHEAT	RIVER							
13B03 13A17 13A02 13B04 14A03 13B07	Big Creek Camp Misery Desert Mountain Fatty Creek Hell Roaring Divide North Fork Jocko	6750 6400 5600 5500 5770 6330	6/2 5/29 5/31 6/2 5/31 6/1	87 108 0 27 41 76	49.6 55.7 0.0 14.8 23.3 42.0	23.3 0.0 0.0 7.4	42.5* 6.0* 30.3*	
CLARK FO	ORK RIVER							
13013 13013 14010 15010 15001 15802 13003 13001 14801	Black Pine Black Pine Pillow Heart Lake Trail Hoodoo Basin Pillow Hoodoo Creek Lookout Skalkaho Summit Stuart Mountain TV Mountain	7100 7100 4800 6000 5900 5250 7260 7400 6800	5/31 5/26 6/1 5/26 6/1 5/31 6/3 6/3	18 SP 20 SP 100 47 41 39 18	8.0 10.2 9.4 40.2 47.6 22.8 23.4 20.3 8.0	0.0 0.0 - - 0.0 1.2 7.4 1.9	14.1*	
BITTERRO	OOT RIVER							
13D02 14C07 13D22 14C08	Gibbons Pass Lost Horse Saddle Mountain Twin Lakes	7100 5940 7940 6510	5/29 5/28 5/29 5/28	30 54 49 75	15.4 26.6 25.7 39.0	0.0 3.0 0.0 9.4	6.7*	

SP - Snow pillow observation - water content only.



AS OF JUNE 1, 1967

(Inches)

			0				tinches	
And in concession of the last			The second second second second second	RRENT DATA	`	Y PAST F	RECORD	
	SNOW COURSE		OF DEPT	SNOW	WATER	WATER CONTENT		
NO.	NAME	ELEVATION			CONTENT	LAST YEAR	AVERAGE	
		MTGGAIDT	RIVER BAS	STN				
		MISSOURI	RIVER DAS	DIM				
MADISON	RIVER							
11E25	Freezeout Lake	7200	5/25	0	0.0	east?	grog,	
11E26	Freezeout Mountain	8250	5/25	34	15.4	-	est).	
11E22	Lake Creek	6100	5/25	Q	0.0	===	===	
11E28	Lion Mountain Pillow	8760	5/25	SP	14.1	_	=	
11E23	Meridian Creek	7000	5/25	2	0.8	===		
11E24	Tepee Creek	8000	5/25	35	14.4	055	€ □	
11E27	Upper West Fork	8750	5/25	26	11.0	•	=	
11E07	West Yellowstone Pillo	w 6700	5/30	0	0.0	COME	cana,	
GALLATI	N RIVER							
10D14	Arch Falls	7350	6/1	20	9.0	1.4	-	
10D15	Bridger Bowl Pillow	7250	5/30	SP	22.6	2.1	=	
10D04	Devil's Slide	8100	6/1	51	24.0	14.5	-	
10D03	Hood Meadow	6600	6/1	0	0.0	0.0	-	
10D13	Lick Creek Pillow	6860	5/25	SP	0.0	0.0	-	
10D18	Maynard Creek Pillow	6210	5/31	SP	4.1	===	=	
10D16	Shower Falls Pillow	8100	6/1	SP	23.6	15.6	=	
11013	Taylor Peaks Pillow	8500		l report				
MISSOUR	I RIVER (Main Stem)							
10009	Deadman Creek	6450	5/31	0	0.0	0.0	(23)	
10001	Kings Hill	7500	5/31	32	15.5	0.4	===	
		V 2	2, 22					
JUDITH	RIVER							
9002	Avalanche	7100	5/31	50	24.4	متت	===	
9001	Crystal Lake	6100	5/31	0	0.0	=	G2C)	
9003	Rock Creek	5600	5/31	0	0.0	<u></u>	e=2	
10006	Spur Park	8000	5/31	56	29.2	8.0	0	
10C06	Spur Park Pillow	8000	5/31	SP	27.4	ee	end.	

SP - Snow pillow observation - water content only.



AS OF JUNE 1, 1967

tinches!

	·		C	URRENT DATA		PAST R	ECORD
	SNOW COURSE		DATE	SO OW DESTH	WATER	WATER CONTENT	
10.	BAME	ELEVATION	SURVEY		CONTENT	LAST YEAR	AYERAGE
UPPER	YELLOWSTONE RIVER						
			,				
9D01	Camp Senia	7890	5/31	10	3.9	0.0	=
9D07	Cooke Station	8150	5/29	37	18.2	-	-
9D06	Fisher Creek	9100	5/29	94	45.9		===
9D06	Fisher Creek Pillow	9100	5/29	SP	47.2	412	=
10D06	Independence	8000	6/2	22	10.5	a	=
10D12	Monument Peak	9000	6/2	57	31.2	=	G
10007	Northeast Entrance	7400	5/29	2	0.9	=	ess.
10D07	Northeast Entrance Pillow	7350	5/29	0	0.0		e=c
9D04	Timberline Creek	8850	5/31	32	12.4	4.3	===
9D08	White Mill	8700	5/29	67	33.2	card.	==
			V .				
JEFFER:	SON RIVER						
12009	Copper Mountain	7700	6/1	13	4.8	ecc).	«

SP - Snow pillow observation - water content only.



SOIL MOISTURE DATA

AS OF

SOIL PROFILE CURRENT DATA PAST RECORD

SOIL MOISTURE STATION

NO. NAME

ELEVATION

DEPTH

FIELD

CAPACITY

SURVEY

MOISTURE

**AVERAGE

ADDITIONS AND CORRECTIONS TO PREVIOUSLY PUBLISHED 1967 DATA

		Janu	uary l						
Kootenai 14A10M 15A02M	Murphy Lake R.S. Raven R.S.	3000 3050	48 48	22.6 23.0	1/5 1/3	20.3 21.2	19.3 19.7	=	
Missouri M 10001M	<u>Main Stem</u> Kings Hill	7420	48	11.8	1/5	5.2	9.1	8.2	
		Feb	ruary l						
Clark Fork 13C15M	Georgetown Lake	6450	48	9.0	1/31	4.7	3.7	65	
		Mai	rch l						
Clark Fork 13C15M 13B19M	Georgetown Lake Seeley Lake R.S.	6450 4030	48 48	9.0 11.9		5.2 10.3	3.6 9.9	3.0	
Gallatin 11E06M	Twenty-One Mile	7150	48	10.0	2/28	2.8	3.0	2.8	
Yellowstor 10D11M 10D07M	<u>ne</u> Battle Ridge Northeast Entrance	6020 7350	48 48	17.6 9.4		13.9 5.2	13.0 7.5	12.9 7.1	
		Apı	ril l						
Gallatin 10D15M	Bridger Bowl	7250	48	17.0	3/31	15.5	16.7	CER _A	
May 1									
Clark Forb 13Cl3M	Black Pine	7100	48	10.0	4/27	7.2	5.5	=	

^{**}AVERAGE FOR PERIOD OF RECORD



SOIL MOISTURE DATA

AS OF JUNE 1, 1967

(Inches) SOIL PROFILE CURRENT DATA PAST RECORD DATE SOIL MOISTURE STATION FIELD CAPACITY LAST YEAR SOIL **AVERAGE DEPTH 0F MOISTURE NO. NAME ELEVATION SURVEY COLUMBIA RIVER BASIN Kootenai 6.3 5/31 7.5 48 Baree Trail 3800 15B15M 22.1 22.6 4.8 MOLALI Murphy Lake R.S. 3000 5/31 22.0 48 23.0 Raven R.S. 3050 15A02M Flathead 8.8 5/31 9.8 8.9 54 8.4 5600 Desert Mountain 13A02M 6.1 5.8 6.5 5/31 6.2 54 5250 Marias Pass 13A05M Clark Fork 8.2 9.2 48 10.0 5/31 7100 Black Pine 13C13M 8.3 7.9 48 9.0 6/1 10.0 6450 Georgetown Lake 13C15M 6/5 11.5 10.3 4030 48 11.9 Seeley Lake R.S. 13B19M 5/31 9.8 10.1 7260 48 10.8 Skalkaho Sunnit 13CO3M Bitterroot 6.8 6.8 7.0 5/29 7100 48 7.1 Gibbons Pass 13D18M 9.6 9.8 10.4 5/29 5250 48 10.6 Lolo Pass 14C05M MISSOURI RIVER BASIN Beaverhead 6/1 15.6 13.8 14.7 6700 48 15.3 11E13M Lakeview Madison 6/1 2.1 2.4 4.7 1.8 4800 40 11D04M Red Bluff 5/28 3.2 6.5 6700 48 West Yellowstone lie07M Gallatin 5/30 16.5 15.5 48 15.8 7250 10D15M Bridger Bowl 6/2 13.7 11.2 10.9 54 14.5 4856 11DO2M College Site 18.7 18.8 6/1 19.2 6860 48 10D13M Lick Creek 9.9 5/28 9.6 10.3 48 10.0 Twenty-One Mile 7150 lle06M Missouri Main Stem 10.9 11.0 11.0 5/31 11.8 7420 48 LOCOLM Kings Hill 5.2 5/29 5.1 5.0 5.9 6350 48 12C08M Stemple Pass Yellowstone 15.1 15.3 5/31 16.5 48 17.6 6020 IODLIM Battle Ridge 9.1 5/29 9.7 9.1 4.8 9.4 Northeast Entrance 7350 lodom

^{**}AVERAGE FOR PERIOD OF RECORD



RESERVOIR STORAGE DATA

AS OF MAY 31, 1967

	A5 (OF MAY 31, 19	0/	(1000 Acre Feet)
				USEABLE STORAGE	
BASIN	RESERVOIR	USEABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
COLUMBIA RIVER	R BASIN				
Flathead	Hungry Horse	3,428.0	2,076.0	3,046.0	2,793.6**
	Flathead Lake	1,791.0	1,400.0	1,509.0	1,559.2
	Camas (Sum of 4)	45.2	38.5	34.3	41.7
	Mission Valley (Sum	of 8) 100.3	44.6	61.4	68.8
lark Fork	Georgetown Lake	31.0	22.0	21.7	24.0
	Noxon Rapids	334.6		292.4	ean
itterroot	Como	34.9	24.2	27.8	29.0
	Painted Rocks	31.7	33.4	32.4	32.4
ISSOURI RIVE	R BASIN				
Beaverhead	Clark Canyon	328.9	120.7	134.7	ess
	Lima	84.0	43.9	70.1	58.1
uby	Ruby	38.8	,0	es.	35.4**
	Hebgen Lake	377.5	281.4	354.6	270.5
	Ennis Lake	41.0	38.6	39.4	35.6
allatin	Middle Creek	8.0		8.2	6.4**
lissouri	Canyon Ferry	2,043.0	1,347.0		1,756.8**
	Hauser & Helena	61,9	59.6	59.0	53.2
	Lake Helena	10.4	9.6	9.4	7.6
	Holter Lake	81.9	74.0	77.4	72.8
	Smith River	10.7	10.8	ezz.	8.7
	Ackley Lake	5.8			4.2
	Durand	7.0	6.6	===	6.4
	Martinsdale	23.1	14.9	cant,	15.0
	Deadman's Basin	72.2	68.2	===	46.8**
	Fort Peck	19,410.0	16,010.0	16,560.0	*
Sun	Gibson	105.0	94.3	95.0	94.4
- was	Willow Creek	32.3	21.8	27.3	
	Pishkun	32.0	32.2		
Marias	Lower Two Medicine	<i>31</i> ≈ 0 ♥	J≈ 0≈	-	9.0
-wa #00	Four Horns	19.2	12.0	15.0	11.6
	Swift	2702	2~00	# J 0 V	29.6
		112.0	96.8	100.9	104.4
	Lake Frances		632.8	752.9	729.5**
Milk	Tiber	1,347.0 127.2	127.8	105.1	107.1
Date Mar	Fresno	66.8	53.5	54.7	40.7
	Nelson		14.0	31.8	35.2
Yellowstone	Lake Sherburne	66.1	11.7	6.0	6.3
TOTTOWS CONE	Mystic Lake	20.8			
	Tongue River	68.0		23.4	17.9**
Big Horn	Cooney	27.5	17.2 773.8	437.9	4107
TE HOLL	Yellowtail	1,409.0	112.0	42107	

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). **AVERAGE FOR PERIOD OF RECORD



Agencies Cooperating in Collecting Data Contained in this Bulletin

- U. S. Forest Service Region 1, Missoula, Montana
- U. S. Geological Survey Helena, Montana
- U. S. Army Corps of Engineers Portland, Oregon Seattle, Washington Omaha, Nebraska
- U. S. Indian Irrigation Service St. Ignatius, Montana
- U. S. Weather Bureau Helena, Montana
- U. S. Bureau of Sports Fisheries and Wildlife Red Rock Lakes Refuge Monida, Montana
- U. S. Bureau of Reclamation Billings, Montana Boise, Idaho
- U. S. Soil Conservation Service Montana, Wyoming, Idaho
- Soil and Water Conservation Districts Montana Counties
- U. S. Bonneville Power Administration Portland, Oregon

- U. S. National Park Service Yellowstone National Park Glacier National Park
- Montana Power Company Butte, Montana
- State Water Conservation Board Helena, Montana
- North Montana Branch Station Agricultural Experiment Station Havre, Montana
- Montana State University
 Agricultural Experiment Station
 Bozeman, Montana
- University of Montana School of Forestry Missoula, Montana
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